

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Weight of the Brain at different periods of Life.*—The *London Journal of Medicine* for February of the present year contains the results of some interesting recent investigations on this subject by THOS. B. PEACOCK, M. D. The author gives the following tables of the average weight of the brain at different ages:—

<i>Average Weight of the Brain at different periods of Life in Males.</i>			
Ages.	Numbers weighed.	Average weight.	
		oz.	dr.
1 to 2 years	3	39	7
2 to 3 ..	4	44	1
3 to 5 ..	6	44	13.16
5 to 7 ..	4	45	4.25
7 to 10 ..	6	46	14.33
10 to 15 ..	13	47	15.2
15 to 20 ..	11	49	5
20 to 25 ..	21	50	13.9
25 to 50 ..	123	50	3.8
50 to 90 ..	53	48	9.4
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Average Weight of the Brain at different periods of Life in Females.

Ages.	Numbers weighed.	Average weight.	
		oz.	dr.
1 to 2 years	3	31	1.3
2 to 3 ..	9	37	5
3 to 5 ..	4	41	0.5
5 to 7 ..	5	41	4
7 to 10 ..	2	40	6
10 to 15 ..	3	40	10.06
15 to 20 ..	18	45	4.1
20 to 25 ..	15	46	1.8
25 to 50 ..	69	45	0.6
50 to 90 ..	23	43	0.3

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"The extreme range," Dr. P. observes, "in the weight of the encephalon of the adult male is from 34 oz. to 62 oz. 12 dr., the number of brains weighed having been 197; and in the adult female the range is from 36 oz. 12 dr. to 54 oz., the number weighed having been 107."

1. The average weight of the encephalon of the adult, as calculated from Dr. Peacock's observations, is, in males, 50 oz. 6 dr.; and in females 44 oz. 7½ dr. Dr. P.'s previous observations* gave an average of 50 oz. 3 dr. for the weight of the encephalon of the adult male, and of 44 oz. 14 dr. for that of the female. A similarly close correspondence will be observed on comparing the respective average weights of the several portions of the brain, as deducted from the two series of observations.

2. The observations now published show, with little exception, an increase of weight in the brain up to the period of adult age, but they are too few to satisfactorily illustrate this point. The tables compiled by Professor Reid,† that drawn up by Dr. Boyd‡ from a very extended series of observations conducted at the St. Marylebone Infirmary, and the tables in Dr. P.'s former communication, founded upon the united observations of Dr. Reid and himself, have so conclusively established the fact that the brain does not attain its full development till from twenty to twenty-five years of age, says Dr. P., "that I should not have thought it necessary to insist upon it, had not Sir W. Hamilton§ recently repeated, as fully established, the opinion which he formerly expressed,|| that the Wenzels¶ were correct in stating that the brain attained maturity at or before the age of seven." To illustrate, therefore, the law of development of the brain, Dr. P. has calculated the whole of the observations of Professor Reid and himself.

By these tables it is shown that the average weight of the brain increases up to from twenty to twenty-five years of age.** During middle life, or from twenty-five to fifty years of age, it retains about the same weight, and in after-life it declines considerably. It is true that some exceptions will be found to this rule among the separate observations, but though it occasionally happens that the brain of a young person may be found to equal or exceed in weight the average of adults of the same sex, such exceptions do not frequently occur, and can then only be ascribed to the organ having attained premature maturity, or, most generally, to the mode in which death has occurred. In cases where there is much obstruction to the circulation through the lungs during the last periods of life, the brain is found very much engorged, and though great care be taken to deprive it of the blood, it will still weigh heavier than if death had taken place under different circumstances. Thus it is that the brains of persons who have died shortly after the receipt of extensive burns, or in the collapsed stage of cholera, are found to be unusually heavy. Generally also persons who have died of acute diseases have heavier brains than those who have long suffered from exhausting causes. To obtain, therefore, unexceptionable results, it would be necessary to calculate the average weight of the brain in persons who have died under precisely similar circumstances, and in observations so framed I am satisfied that the exceptions to the general rule would be very rare.

Sir W. Hamilton†† states that he has "established, apart from the proof by averages, that the human encephalon does not increase after the age of seven at the highest. This has been done by measuring the head of the same young person from infancy to adolescence and maturity: for the slight increase in the size of the head after seven (or six) is exhausted by the development to be allowed to the bones, muscles, integuments, and hair." It is, however, evident that this method of investigation can show only the period at which the brain attains its greatest bulk, and not that at which its development is completed; for every practical anatomist is familiar with the fact that the density of the brain varies greatly at different periods of life. Calculations of the average

* Edinburgh Monthly Journal of Medical Science, vol. vii. pp. 101, 166. 1846.

† Edinburgh Monthly Journal, vol. iv. 1843.

‡ Wagner's Physiology, translated by Willis. 1844. Appendix, p. 700.

§ Edinburgh New Philosophical Journal, Jan. to April, 1850, p. 330.

|| Monro's Anatomy of the Brain. 1831.

¶ De penitiori structura cerebri Hominis et Brutorum, p. 267, fol. Tubing. 1812.

** In Dr. Boyd's Table, the weight, both in males and females, is greater at from 30 to 40 years than at any other period of life.

†† Edinburgh New Phil. Journ. January to April 1850

weight of the brain afford the only means by which we can ascertain the period at which its full development is attained, and the changes which it undergoes during the progress of life.

2. *Anatomy of the Subcutaneous Bursæ.*—Mr. WM. COULSON gives (*London Journ. Med.*, Jan. 1851) the following description of the subcutaneous bursæ. These are situated in various parts of the body immediately beneath the integuments, of which they are an appendage. They are connected with, and belong to, the subcutaneous cellular adipose membrane, being in no instance continuous with the deep bursæ, or with the tendons, muscles, or bones, which they protect. The structures composing them are, first, the capsule itself; secondly, certain filaments traversing it; thirdly, folds, or septa, being reduplications of the inner membrane, and these may be either partial or complete; and fourthly, small adipose corpuscular fringes. There is, also, the peculiar fluid secreted by the interior of the sac. In respect of their being shut sacs, intended to facilitate motion and to protect opposing surfaces, and as regards also the fluid they secrete, these bursæ have analogies, no doubt, with the deeper bursæ. In the more perfect synovial capsule of the knee-joint, for example, we not only find a shut sac, but septa forming the alar ligaments; being nearly analogous to the septa of the subcutaneous bursæ. Nor does the analogy stop here, seeing that we find the alar ligament so fully developed in some animals as to divide the knee-joint into two cavities—thus converting it from a unilocular into a bilocular sac: this happens in many of the superficial bursæ. The subcutaneous bursæ vary somewhat in form, and even, perhaps, a little in their structure. In the axilla, for example, where they have, probably, the simplest form, they resemble the cells of a bee-hive piled on each other. In the order of simplicity of structure, those of the groin follow. The mode of formation of these bursæ in the foetal state illustrates, I think, their varieties in the adult. For we find, sometimes, that the cellular tissue, in no way modified, takes the place of a properly developed bursæ; and this is exactly what happens up to the fifth month of foetal life. At other times, in the adult, we find them small, but perfect; showing that their development has been arrested. Even the anconal bursa, viewed by Schreger as the most perfect, has been found, by other anatomists, small, contracted, or scarcely perceptible. Pathological changes also, by altering the condition of these bursæ, reduce them to the tissue, out of which they were formed. Sometimes the interior is filled with a serous fluid, and the walls of the sac are thin, and almost pellucid; at other times they become soft, flaccid, porous, and reticulated, and lose their cohesion—clearly indicating a retrogression to their primitive condition.

The fluid secreted by, and contained within, these subcutaneous bursæ, is held by chemists to be an aqueous solution of albumen, combined with saline matters. The epithelium, common to all true articular synovial membranes, cannot be discovered, even with the aid of the microscope, in the lining membrane of these bursæ.*

It would seem that, prior to the second month of foetal life, these bursæ are open. A remark applicable to the entire system I now describe is that in youth the capsule is thin and pellucid; as age advances, the bursæ become opaque and yellowish. Blood-vessels abound on the exterior of the sac. The inner surface of the dermoid segment resembles a serous membrane; the opposing surface, on the contrary, has a synovial appearance; that is, it is soft, pulpy, and as if covered with glistening elevations. But if these two surfaces differ, as has been alleged by Schreger, their secretions may also differ, giving a more complex character to the fluid than was at first supposed.

The subcutaneous bursa with which surgeons are most familiar is the one situated over the patella. This bursa, which may be called the patellar, is of

* Mr. Toynbee examined for me some fresh fluid, which I removed from a carpal bursa. He says: "The gelatinous matter from the bursa consists of a transparent, viscid, semi-fluid substance, interspersed through which are rounded and ovoid cells, containing granular matter, and having one or two transparent nuclei attached to their inner surface."

a globular, or rather oval shape, the base being usually limited by the extent of the bone. The walls of the sac, in contact in the healthy state, are bedewed by a fluid analogous to what we find in the ordinary cellular tissue of the body, performing, no doubt, the function of synovia; like that fluid, as has been already mentioned, it is an aqueous solution of albumen, combined with saline matters.

The patellar bursa belongs essentially to the superficial or subcutaneous system: it is exterior to the crural aponeurosis; and microscopic research, so much improved and extended of late years, merely confirms the accurate conceptions of Schreger. The epithelium investing the inner surface of the articular synovial membranes is not found in the interior of this or of any other bursa. The peculiar glistening fibres already described are found to stretch across at various points, forming septa or partitions, more or less complete. In many persons, two bursæ, and even three, have been observed developed over one patella, perfectly distinct from each other. This duplication or triplication of the bursæ is not confined to the patellar bursæ, but extends as well to others. My friend Mr. Ireland brought me, some time ago, a patient with a bursa of the size of a marble, situated over the right os magnum, which the patient wished to have removed. I dissected it entire, so that it rolled on the table: in three or four months afterwards, another bursa, as large as the one which had been previously removed, made its appearance in the same situation. Thus may be traced to an imperfect knowledge of the anatomy of these organs the theory of accidental bursæ. When a second bursa appears after the removal of the first, it is simply the enlargement of a second, coeval with the first, and observed then only for the first time by the surgeon.

In the popliteal space, we usually find three subcutaneous bursæ—an external, internal, and middle. The history of these is curious: with similar relations to all the others, they yet present, when enlarged, certain peculiarities. Both surfaces against which the enlarged bursa presses being comparatively soft and yielding, the swelling does not assume the distinct globular form which those situated over bones exhibit. A case of this kind came under my notice a few months ago. A young woman, æt. 32, applied to me, in July last, with a swelling in the right popliteal space, situated principally in the centre of the ham, and of the size of an orange, though more compressed. It was movable, free from any pulsatory movement, and, when firmly pressed, gave an elastic feel to the fingers. The integuments were very little changed in colour, and the swelling was free from pain. I entertained no doubt of its nature, and punctured it by means of a grooved needle, when an ounce and a half of a white gelatinous fluid, much resembling the vitreous humour, escaped; a compress was applied over the part, strips of soap plaster over this, and a bandage tightly over the whole. On removing the pressure at the end of a week, a re-accumulation of the fluid had taken place. The swelling was again punctured, and the fluid, which was much less than on the previous occasion, allowed to escape. The pressure was applied in the same way as before, and removed from time to time. No fresh accumulation took place, and at the end of two months she was quite cured. Schreger has described this bursa, but has given no drawing of it; he does not seem to have met with it in a diseased condition.

There is usually a distinct bursa over each malleolus; but the external malleolar bursa is the one most liable to be enlarged or distended with fluid. At one time it was thought that in club-foot an accidental bursa was formed, to protect the integument at the point of greatest pressure; but this notion has been distinctly refuted. A subcutaneous bursa, occasionally of considerable size, very generally exists over the distal extremity of the metatarsal bone of the great toe, close to the joint, and the term bunion has been applied to it when inflamed or thickened. Subcutaneous bursæ are met with over the trochanter major and tuberosity of the ischium, in the groins, and in connection with the lower part of the superficial fascia of the abdomen.

Bursæ of this kind exist also, as has been already mentioned, in the axillæ, and over the condyles of the humerus. An enlarged bursa over the inner condyle of the humerus came under my notice. C. W., æt. 18, applied to me on the 18th August, with a swelling over and a little above the inner condyle. As

the patient, a few days before, was stooping to raise something heavy from the floor, he first felt pain in the part, and shortly afterwards discovered a slight swelling. At first, it was like a small indurated gland, but it gradually increased to the size of a walnut. It was unattended with pain, and gave, on pressure, an elastic, indistinct fluctuating feel. On the 3d September, I punctured it, and there exuded about a tablespoonful of transparent gelatinous fluid. Firm pressure was applied, and removed from time to time, and the swelling has not returned.

The bursa, which we may call anconal, as situated over the olecranon, is well known, and is often enlarged. There is also one over the distal extremities of the radius and ulna, and one on the carpus, corresponding to the surface of the os magnum, which is often enlarged. A girl, 13 years of age, applied to me on the 7th September, with a swelling like a large marble, which had existed six months, and was situated on the posterior surface of the right carpus, over the os magnum. I punctured it with a grooved needle, evacuated a teaspoonful of white vitreous-looking fluid. Pressure was applied over the part, and renewed every week for three times. The patient is now quite well.

That bursa in this situation may sometimes acquire considerable size is shown by the following case. E. F., æt. 30, applied to me on November 15th, on account of a large bursa over the os magnum, and a little to the radial side of it. About eight years ago, it first arose, from her husband pressing this part of her hand very hard with his knuckles—to use her own expression, by “his knuckling her.” Immediately after this, a swelling commenced, and at the end of a twelvemonth it had attained the size of a walnut. It was then punctured, and near two teaspoonfuls of fluid were evacuated. No pressure was applied; the swelling disappeared until two years ago, since which time it gradually increased, till it reached the present size. The swelling prevented her from turning her hand back, and from wringing clothes. There was a great feeling of weakness in the joint, and occasional pain in and about the swelling, especially after exertion. On November 18th, I punctured it with a needle. As the case is still under treatment, I am unable to give the result: I feel no doubt, however, of its permanent dispersion.

There is a large bursa over the first joint of the thumb, and others, often double, over the first and second joints of the fingers. That bursæ exist in other parts of the body, I have no reason to doubt; one is not unfrequently found under the integuments, at the angle of the jaw; and others, extremely minute, and rarely demonstrable, are said to exist under the integuments of the back, corresponding to the spinous processes of the fifth, sixth, and seventh cervical vertebrae. More extended pathological inquiries may enable us still to discover others; for it is by their accidental enlargement that the presence of some of them has become known to surgeons.

3. *On the Round Ligament of the Uterus.* By G. RAINEY, Esq.—Speaking of the difference between the striated and non-striated varieties of muscular fibre, Mr. Rainey denies that the round ligaments are composed of the latter; and affirms, on the contrary, that they are composed of the striated or voluntary fibre. This opinion he supports on the following grounds—first, that the round ligament arises from three tendinous and muscular fasciculi; one from the tendon of the internal oblique, a centre one from the upper column of the external abdominal ring, the third from the inferior column of the same. These uniting form a round end, which expands upon the angle of the uterus. The striped fibres chiefly occupy the centre of the cord, but as they approach the uterus they lose this character, and assume that of the dartos muscle.

Mr. Rainey further states that the round ligaments do not, as was supposed, emerge from the external ring to be inserted upon the mons veneris; and that their use is in some manner connected with the act of coition.

In the same essay, the author investigates the changes which the uterus undergoes during gestation. He regards the increase in size to depend upon the development of the embryonic nucleated fibres of the unimpregnated uterus, which receive a new impulse on the reception of the ovum. After parturition, he supposes the fully developed fibres to be absorbed and replaced by fresh embryonic ones.—*Philosophical Transactions.*

4. *New Muscles of the Urethra.* By H. HANCOCK, Esq.—A great deal has been said and written upon the subject of spasmodic stricture and strictures in general; but I am not aware of any one having hitherto satisfactorily accounted for the several phenomena displayed in the various forms of impediments to the passage of urine which are usually described as spasmodic stricture. Some have ascribed them to inflammation; others to engorgement of the net-work of vessels surrounding the prostate; others, and the larger number, to morbid and irregular contraction of the muscles surrounding the membranous portion of the urethra, viz., Wilson's, Guthrie's, and Santorini's muscles, together with that usually denominated the "accelerator urinæ muscle." I have always considered these explanations unsatisfactory, and totally inadequate to account for the difficulties I have encountered in the treatment of urethral diseases. I have been unable to understand how voluntary muscles should continue in forced and excessive action so long as spasmodic retention of urine has been known to exist. I have been unable to account for the muscles just named causing spasmodic closure at parts of the urethra which they do not invest. I could not account for the almost complete retention of urine in cases where no impediment presented to the passage of instruments of large size; neither, by the reasons usually assigned, could I account for the sudden contractions of the urethra so frequently met with, and which could only be ascribed to the more general presence of muscular stricture than has hitherto been considered to obtain in these parts. Assisted by my friend Mr. Hogg, to whom I am greatly indebted, I have lately paid great attention to this subject; and I beg to submit to the society the results of our investigations. Sir E. Home, and various other surgeons, have described the urethra as muscular; but in this they were in error. The urethra itself consists of mucous membrane, lined by its epithelial scales, but it is closely invested by muscular fibres of organic structure similar to, and in fact continuous with, the muscular coat of the bladder. The muscular coat of the bladder appears to me to consist of two layers of involuntary muscular fibres, an internal and an external; the external, partly covered by peritoneum, passes forwards and extends over the outside of the prostate gland; the internal, on the contrary, separated from the mucous lining of the bladder by cellular tissue, accompanies the mucous lining when it becomes urethra, through the prostate gland, forming an involuntary muscular covering to the urethra in its passage through the gland. The membranous portion of the urethra is next closely invested by a continuation of these muscular fibres, which cannot be mistaken for any portion of Wilson's, Guthrie's, or Santorini's muscles, as the latter are voluntary, and present the usual striated appearance when viewed by the microscope, whilst the former are strictly involuntary and nucleated. Conducted forwards upon the membranous portion, they reach the bulb, and here they divide into two portions, a superior and an inferior; the superior continues onward to the orifice of the urethra, lying between the urethra and corpus spongiosum; the inferior passes on the outer surface of the corpus spongiosum, separating it from its fibrous investment, to which the fibres adhere pretty closely; these latter are also continued forward to the orifice of the urethra, and in their course they invest the spongy portion of the bulb; the urethra and the glans penis entering very largely into the formation of that peculiar structure found at the orifice of the urethra, and which appears to consist almost entirely of involuntary muscle and elastic cellular tissue, constituting an additional sphincter muscle to those already described as existing in various parts of the body. It will thus be seen that the corpus spongiosum urethræ lies between two layers of involuntary muscle, the one separating it from the urethra, the other from its fibrous covering, an arrangement, doubtless, exerting great influence upon the expulsion of the blood from the spongy tissue, when erection of the organ is no longer required, as well as upon the acceleration of the passage of the urine along the urethra; and I am doubtful whether the hitherto named accelerator urinæ muscles may not with more propriety be considered a depressor penis, or a direct opponent to the erectores penis. I have thought it right to make this short communication to the Society, as the now proved existence of a muscular and continuous muscular coat to the very orifice of the urethra may tend, in a great measure, to

explain the anomalies met with in the various cases of stricture, and may also be the means of introducing an improved means of treatment. I am still continuing the investigation of this subject; and, should the Society desire it, I shall be happy to bring it forward in a more detailed form at some future period.—*Report of Proceedings of Medical Society of London, in Med. Times, 22d Feb. 1851.*

5. *Fistula of Stomach.*—Dr. ROBERTSON gave to the Medico-Chirurgical Society a short sketch of the history of a patient at present under his care in the Infirmary, in whom a communication between the stomach and external surface of the abdomen had existed for several years. The perforation had resulted from internal causes, and the present condition of the patient encouraged the hope that a series of experiments upon the digestive process might be undertaken without prejudice to the woman's health. Dr. Christison, Dr. Spittal, Dr. MacLagan, and Dr. Simpson made some observations on the case, and a committee was named to make the necessary investigations on the subject. The committee consists of the President, Dr. Christison, Dr. Bennett, Dr. Douglas MacLagan, Mr. Goodsir, and Dr. W. Robertson.—*Monthly Journ., Jan. 1851.*

6. *Researches to prove the Non-vascularity of certain Animal Tissues.*—The following conclusions are given by Mr. TOYNBEE as embodying the results of his investigations:—

1. The articular cartilage of joints in a healthy state contains no blood-vessels, and that it is nourished by the vessels which surround it; in certain diseases of the joints, these vessels are prolonged into the substance of articular cartilage.

2. The fibro-cartilages of the joints and of the spine, when healthy, contain blood-vessels only at their circumference; in disease they become vascular.

3. That the following structures of the eye—viz., the cornea, the crystalline lens, and the vitreous humour possess no blood-vessels in a healthy state; in some diseases of the eye the cornea becomes vascular.

4. The epidermis of the skin, teeth, nails, feathers, and the hoofs of animals have no blood-vessels. The hoof of the horse is pervaded by numerous fine canals which circulate a fluid throughout the whole of the substance, and give to it the elasticity so essential to the due performance of its functions.

The author states that his object has been to establish as a law in animal physiology, *that organs are capable of being nourished, and of increasing in size, without the presence of blood-vessels in their substance.*

The application of the above-named law to the study of surgery, in reference to the causes of the extension of vessels into the extra-vascular tissues of the eye and the joints, when in a diseased state, and to the measures to be adopted for the prevention and cure of those affections which are dependent thereon, and to pathology, in the investigation of the nature of morbid structures, particularly of those classes which contain no blood-vessels, will, the author feels certain, be productive of scientific interest and of practical advantage.—*Philos. Trans. 1841.*

7. *On the Absorption of Alimentary Substances, and the Functions of the Lacteals.*—M. BERNARD read a memoir on this subject before the Academy of Sciences, Paris, in which he proposed to determine, by direct experiment, the nature of the nutritive principles which are absorbed and conveyed by the chyliferous vessels, in order to ascertain if there really exist any alimentary substances which absolutely escape venous absorption, and consequently avoid passing through the liver before arriving at the lungs.

Alimentary substances submitted to digestion are, in the intestinal canal, finally reduced to three principal substances—the saccharine, the albuminous, and the fatty emulsive; on these M. Bernard has instituted experiments:—

1. *With regard to the absorption of Sugar by the lacteals.*—On injecting large quantities of sugar into the stomachs of different mammifera, it has been found in the blood of the portal vein, while it was absent from the chyle of the thoracic duct at the same time and under the same circumstances; whence

it is concluded that sugar, before arriving at the lungs, traverses the liver, where it undergoes a peculiar physiological modification. If a solution of grape sugar be injected into the superficial veins of a dog, it speedily passes off by the urine; on the contrary, if the solution of sugar be injected into the radicles of the portal vein, the sugar is no longer eliminated by the kidneys, but passes into the circulation, and is assimilated in the same manner as if taken into the digestive canal. Thus it is shown that the absorption of sugar by the portal system is a condition essential to its assimilation, since, if confined to the lacteals, the saccharine principle is abstracted from the influence of the liver, and is diverted directly into the general venous circulation, as takes place when it is injected by the jugular vein.

2d. *As to the absorption of Albumen by the Lacteals.*—Albumen injected into the general venous circulation soon appeared in the urine. If injected into the portal vein, it does not then appear in the urine, but is assimilated in the same manner as obtains with sugar.

3d. *Absorption of Fat.*—M. Bernard's previous researches have shown that fatty matters are not capable of admission into the lacteals, until an emulsion has been formed by the action of the pancreatic juice. Immediately that this emulsion has penetrated the lacteals, their aspect undergoes an entire change; instead of remaining transparent, like other lymphatics of other parts of the body, they assume a milk-white appearance, and owing to the transparency of the coats of these vessels, the course of the fatty matter may be followed from the intestine to the left subclavian vein, where it is diverted into the thoracic duct. It is not necessary that fatty matters should traverse the liver in order to their assimilation. M. Bernard has injected fatty emulsions into the jugular vein, but has not found that substance in the urine.

Thus the products of digestion may be distinguished with reference to absorption into two groups: *e. g.* 1st, fatty and albuminous matter absorbed by the lacteals, passing into the general circulation without having traversed the liver. The last proposition cannot be taken in so absolute a sense as the former, since experiment and microscopical examination demonstrate that fatty matters are absorbed both by the portal system and by the lacteals.—*London Medical Gazette*, January, 1851.

MATERIA MEDICA AND PHARMACY.

8. *Evil Effects following the Incautious Administration of Chloroform.*—Dr. BACOT stated to the Surgical Society of Ireland, December 7, 1850, that a few months previously he had been sent for, at about half past ten P. M., to see a young lady to whom chloroform had been administered, at twelve o'clock that day, for neuralgic pains of the face arising from carious teeth. She was a healthy dark-complexioned woman, and had, he understood, great repugnance to the inhalation of chloroform, to which she submitted but as a last resource, after having exhausted every other available means of ridding herself of those very distressing pains. From inquiries, he judged that from a drachm and a half to two drachms had been administered before anæsthesia had been produced. At the period of Dr. B.'s visit, ten hours and a half after the administration of the chloroform, the symptoms under which she laboured were those of coma. She was lying on her left side, perfectly unconscious of all around her, her eyelids closed; on raising the lids, the eyeballs appeared much suffused, the pupils irregular, and scarcely acted upon by light. There was considerable congestion about her face, and her head felt hot; surface of the body and legs cold; pulse 90, thready, irregular, and intermittent. Up to seven o'clock her friends had not found much difficulty in arousing her, although she soon relapsed into the same state. Since that hour it had been much more difficult to dispel the stupor, and it was after many endeavours that Dr. B. was able to do so. When roused, however, she intelligently answered a question, but after some hesitation, as if endeavouring to collect her thoughts. She then almost immediately sank into the same comatose state, having first expressed herself to the